

REMARKS/ARGUMENTS

With this amendment, claims 6-34 are pending. Claims 1-5, 9, 12, 24, 27 and 35-55 are cancelled without prejudice. For convenience, the Examiner's rejections are addressed in the order presented in the May 18, 2007 Office Action.

Applicants' thank Examiner Davis for participating in a telephonic interview with Applicants' representative Beth Kelly on October 15, 2007. Rejections for alleged obviousness were discussed and tentative agreement was reached on amended claims, as reflected in this response.

I. Status of the claims

Claims 6 and 21 are amended to recite selecting undifferentiated pancreatic cells that bind to a CD56 binding reagent and separating the undifferentiated pancreatic cells from cells that do not bind to a CD56 binding reagent. The undifferentiated pancreatic cells that bind to the CD56 binding reagent are able to be expanded in culture. Support for this amendment is found throughout the specification, for example, at paragraph 42 which reads that "undifferentiated pancreatic cells are able to proliferate". Paragraph 19 discloses that propagating pancreatic cells undergo cell division and can be passaged from one culture vessel to another. Cell passage is defined at paragraph 48 as expansion of a cell population. Paragraph 150 discloses that CD56 positive cells can be grown and expanded in culture and can be induced to differentiate. Example 3 provides evidence of the growth and differentiation of Cd56 positive cells. In addition, paragraph 19 discloses that propagating pancreatic cells that exhibit the CD56 cell surface marker "are capable of differentiation into mature pancreatic cells", *i.e.*, are undifferentiated. These amendments add no new matter.

Claims 9, 12, 24, and 27 are cancelled without prejudice to subsequent revival. This cancellation is solely in response to new rules issued by the USPTO.

II. Rejections under 35 U.S.C. §103(a)

Claims 6-34 are rejected as allegedly obvious over Fung *et al.*, (US Patent No. 6,326,201) and Shipley *et al.*, *Appl. Immunochem.* 5:87-93 (1997). The amended claims are directed to a method of obtaining a culture of undifferentiated propagating pancreatic cells that express a CD56 protein as a cell surface marker. Method steps include isolating pancreatic cells from a pancreas; contacting the pancreatic cells with a CD56 binding reagent; selecting undifferentiated pancreatic cells that specifically bind to the CD56 binding reagent; and separating the CD56 expressing cells from pancreatic cells that do not bind the CD56 binding reagent. To the extent the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claims limitations. MPEP§2143. Recently, in reviewing this standard, the Supreme Court noted that any analysis supporting a rejection under § 103(a) must be made explicit, and that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the manner claimed." *KSR Intl Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (U.S. 2007). "This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.*

While the Court warned against a "rigid application" of the TSM test, the Court also found that these questions could provide a "helpful insight" in determining whether the claimed subject matter is obvious under § 103(a). *Id.* at 1396-1397. *See also*, Memorandum to Technology Directors from Margaret A. Focarino, Deputy Commissioner for Patent Operations, May 3, 2007. The cited references provide no motivation for their combination and provide no expectation of success to arrive at a method of selecting undifferentiated pancreatic cells that specifically bind to the CD56 binding reagent.

The amended claims now recite selection of undifferentiated CD56 positive pancreatic cells that can be expanded in culture. None of the cited references teach that undifferentiated CD56 positive cells can be isolated from pancreas. None of the cited references provide motivation to select undifferentiated CD56 positive cells from pancreas and none of the cited references provide a reasonable expectation that undifferentiated CD56 positive cells could be selected from pancreas.

According to the Office Action Fung *et al.* teach a method of obtaining a culture of pancreatic cells using steps that allegedly include isolating cells using antibodies directed against specific proteins. The Office Action concedes that Fung *et al.* does not disclose using an anti-CD56 antibody. Office Action at page 3 and 5. The Office Action alleges that Shipley *et al.* teach that CD56 is expressed on pancreatic islets and that this disclosure would lead one of skill to isolate pancreatic cells using the methods of Fung *et al.* Office Action at page 4 and 5. Applicants respectfully remind the Examiner that pancreatic islet cells express insulin and are differentiated cells. *See, e.g.*, Declaration of Dr. W. Tsang, paragraph 6, submitted with previous response. Thus, Shipley *et al.* teaches away from the claimed methods of selecting undifferentiated pancreatic cells using a CD56 binding agent.

The obviousness rejection relies on Shipley *et al.* to provide the motivation to use CD56 in the methods of Fung *et al.* Office Action at page 4. As Shipley *et al.* teach away from selection of undifferentiated cells, the rejection fails to provide the required motivation for an obviousness rejection. The methods employed by Shipley *et al.*, *i.e.*, microwaving pancreatic tissue, are incompatible with producing a viable cell culture, as is claimed. Therefore, nothing in the combination of Shipley *et al.* and Fung *et al.* provides an expectation of success to successfully select undifferentiated pancreatic cells that specifically bind to the CD56 binding reagent.

In view of the above amendments and remarks, withdrawal of the rejection for alleged obviousness is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,
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